# THE FOUNDING OF HOLYOKE
# 1848

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DR. RALPH H. GABRIEL

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*A Newcomen Address*

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# THE
# FOUNDING
# OF HOLYOKE
# 1848

"*Cotton was a magic word in New England*. In Massachusetts, Connecticut, and Rhode Island, many villages and a few large cities were built about cotton mills. *Ewing*, wearing the stock and the tall hat which marked the well-dressed gentleman, stood beside the rapids and dreamed of *a Holyoke to be*."

—R. H. GABRIEL

THE NEWCOMEN SOCIETY
AMERICAN BRANCH

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# THE FOUNDING OF HOLYOKE

## 1848

*By*
DR. RALPH H. GABRIEL
Member of Newcomen Society
*Larned Professor of American History*
*Yale University*

*A Newcomen Address*
1936

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*This Address was delivered at Greenfield, Massachusetts, on October 8, 1936, during the "1936 Pilgrimage" of The American Branch of The Newcomen Society of England.*

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# *THE FOUNDING OF HOLYOKE

# 1848

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In the Summer of 1845, George C. Ewing, pious New England Puritan, salesman, and member of the firm of the Fairbanks Scale Company of St. Johnsbury, Vermont, climbed aboard a train of the new Connecticut River Railway for a journey to Ireland Parish. In spite of the hard and uncomfortable seat he thought again of the marvels of modern invention. Here he was rushing from customer to customer at a rate of twenty miles an hour. He was independent of the mud of country highways; he no longer had to endure the jolting of the stagecoach whose wheels bounded from rut to stone as the driver urged on the sweating team. Looking out of the window he saw at the highway crossings unsophisticated farm horses rearing and plunging as the strange iron monster roared by. From time to time as the fireman poked a few more logs under the boiler, flaming embers rose from the flue of the locomotive and threatened to start conflagrations in the dry leaves which carpeted the woods. As George C. Ewing brushed an accumulation of ashes and dust from his coat

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**The Author wishes to acknowledge the great assistance of Mrs. Constance McL. Green, of Holyoke, Massachusetts.*

and stove pipe hat, he reflected that the price of progress is a certain discomfort but, after all, that the goal of a salesman's life is to get to as many customers as rapidly as possible. His attempts to talk to his fellow passengers were interrupted at every station by the rattle of the coupling links and the squeal of the hand brakes which the brakemen frantically screwed against the wheels. Before the day of Westinghouse, the trains on the Connecticut Railroad jolted and shuddered to a stop. At the stations Ewing watched the ladies get on and off, admiring the wasp waists of the fashionable belles and the tasteful bonnets which confined their hair. He stood well back to allow them to pass, when he himself alighted, for the full bustles and hoops which were coming to be a part of feminine attire required considerable sea room. George C. Ewing left the train at Ireland Parish, a cluster of houses set back a little way from the Connecticut river near the great rapids, where the river cut through a trap ridge and dropped sixty feet in two and one-half miles.

The name, Ireland Parish, was the result of the blood of one of its eighteenth century founders. It was a typical New England farming hamlet of neat white houses straggling between Mt. Tom and the river. Like so many such villages in Massachusetts it showed the impress of a rising American industrialism. An enterprising citizen had organized and incorporated the Hadley Falls Company and a wing dam had been built into the river deflecting water which turned the wheels of a small, but profitable, cotton mill. As Ewing walked down the unpaved street toward the familiar general store, he passed some boardinghouses where lived the out-of-town girls who worked at the spindles in the mill. They were farmers' daughters whose homes were too far away to permit their driving to work. The Hadley Falls Company at the outset of its enterprise had advertised for boarding house keepers whose function, beside providing food and shelter, was to preserve the Victorian proprieties. About the general store lounged the usual group as evening brought the day's work to an end. The cross roads commercial emporium was the local club. Clustering around the stove in winter and in summer scattered about the front porch or steps, the farmers of the locality discussed the doings of the community and the politics of state and nation. In the summer of 1845 the annexation of Texas, rushed through Congress on March 1, was the subject for animated dispute. Many a New Englander did not approve of this action in which the claims of Mexico were disregarded so completely as to bring the two nations to the verge of war. Abolition sentiment was rising in Massachusetts, and Texas would be another slave state added to the already powerful Cotton Kingdom. George C. Ewing dropped out of the conversation at the store and walked down to the bank of the Connecticut river.

### EWING'S VISION

He stood for a time beside the rapids that had blocked navigation until a canal had been built around them. Terrifying rapids they were for the unlucky boatman who chanced to be sucked unto the foam-covered quick water where the great river tumbled over a rocky bed. Above them the lazy stream suggested peace, but, at the cascades, it became a symbol of power. Not far away he noted the wing dam and the mill which it supported. Cotton was a magic word in New England. In Massachusetts, Connecticut, and Rhode Island, many villages and a few large cities were built about cotton mills. There seemed no limit to the possible expansion of the textile industry. Ewing, wearing the stock and the tall hat which marked the well-dressed gentleman, stood beside the rapids and thought of the energy going to waste. In his imagination he saw a great dam across the river. No one before had dared to attempt the harnessing of so great and powerful a stream. If man could achieve the railroad, thought Ewing, he could conquer the Connecticut. In real life George C. Ewing sold Fairbanks scales to country and city merchants; in the world of his dreams he was the builder of a city surrounding a group of giant cotton mills. A little later he climbed again into the wooden coach on the Connecticut Railroad line and rattled away toward St. Johnsbury, Vermont. He had his plan. Would he be able to interest the other members of the Fairbanks firm in it?

From St. Johnsbury, Ewing went to New York and later to Hartford, Springfield, and Boston. He wrote letters. He talked long and earnestly to business men whose offices had neither telephones nor typewriters. He used the history of New England to support his argument. Moses Brown in 1789 had thrown a pioneer dam across the Blackstone river in Rhode Island and had built a cotton mill according to the plans of Samuel Slater, fresh from England. Since then the Blackstone had been interrupted by a series of dams. In 1813 Francis C. Lowell and Patrick T. Jackson had erected a mill of seventeen hundred spindles on the Charles river at Waltham, Massachusetts. Twelve years later a dam across the Merrimac had called the city of Lowell into being. In 1838 another dam farther up the same river had furnished power for the textile mills which created Manchester, New Hampshire. In this very year of 1845 still a third dam across the Merrimac, this time farther down, was being started and was to be the foundation of a town to be called Lawrence.

George C. Ewing leaned closer to the prospective investor. New England, he said in effect, is built on dams. The conquest of the Merrimac was the first victory over a large river. If man could hold back the Merrimac in 1823, he can dam the Connecticut in 1846. Ewing paused to let the point sink in. The time, he continued, is ripe for big enterprise. Only two years ago, in 1844, the clumsy and inefficient old water wheel became obsolescent. An improved device called a turbine has been introduced into some of the Lowell mills and has already demonstrated its superiority. At Hadley Falls we have vast water power. With the turbine the opportunity for profit is unlimited.

George Ewing was proposing no adventure into the unknown. He merely wanted to apply a tried solution to a familiar, though unusually difficult, problem. He had undergone a change normal in that mid-nineteenth century American society when industrialism was rising and the tempo of life accelerating. He had graduated from the selling of goods to the selling of an idea. From the chrysalis of a drummer he had emerged with the full wings and the siren song of the promoter.

During the autumn of 1845 and the spring of 1846, George C. Ewing worked in New England and New York. The drift of national events supported his arguments. Early in 1846 President James K. Polk maneuvered England into agreeing to a division of that vast territory in the far North-West called Oregon which gave to the United States the lion's share, including the rich valley of the Columbia river. In the same spring the war with Mexico had broken out. In the summer General Zachary Taylor made a thrust into the northern-most enemy provinces and the Mexicans fell back before his columns. At the same time General Stephen Kearny cut loose from Fort Leavenworth in Kansas and marched to the conquest of New Mexico. From far distant California came rumors of an uprising of Americans called the Bear Flag revolt and of the efforts of Col. John C. Fremont and Commodore Sloat to secure that rich province for the United States. America was expanding and Americans knew for the first time in their history the mood of the conqueror. Oregon and Texas were noble prizes. California, slipping from the hands of the incompetent Mexicans, was the richest of all. The railroad, already successful in the short runs of the East, promised some day to bind New England to the Pacific coast. Let New Englanders say what they would about the ethics of the Mexican War, they well knew that Polk, by means of it, was enriching the nation. They sensed that, when it was ended, the territory within the national boundaries would be as large as Europe. It was an appropriate time for American entrepreneurs to dream audaciously. By mid-summer 1847 George C. Ewing had won. He alighted one day at Ireland Depot with a new task to accomplish.

As special agent for the men of money behind the proposed enterprise Ewing began to call upon the farmers and land owners of Ireland Parish and in course of time bought more than a thousand acres beside the river. He paid well for the land and the farmers were satisfied. All save one—an irascible old gentleman who loved his river bottom soil and had no use for newfangled factories. His land was vital to the enterprise. When approach followed approach, he became annoyed and, according to tradition, one day appeared at his doorway with a fowling piece which he fired in the general direction of an approaching purchaser, a manifestation of unfriendliness which caused the latter to retire as rapidly as possible upon his base of operations. The outraged and discomfited buyers talked of having the law upon the gray haired individualist of the valley who stood with his gun squarely across the path of progress. But more sober counsels prevailed. A flank attack heavily supported by money finally won the coveted position.

## BUILDING THE DAM

On the cold Sunday morning of November 18, 1848 the roads leading to the rapids of the Connecticut river were full of hurrying carriages and persons on foot. Hundreds of passengers brought by the railroad swelled the crowds milling about the ends of a dam that stretched across the Connecticut. The plain seemed covered with tall hats and close fitting bonnets. Excitement and anticipation ran high. Deserted were the streets of the near-by village of Irish laborers who had built the dam, for the inhabitants of the Patch, as it was called, were all on the river bank awaiting the events of the day. Now and again John Chase of West Point and Philander Anderson of Chicopee looked anxiously at the structure which was the product of their engineering skill. Both were distinguished engineers. Each had planned the water system of an important New England city. Their dam, even before its completion, was a national sensation. To many conservative Americans its audacity seemed foolhardiness. Their reputations were at stake. For the last time they walked along the wooden structure looking for flaws.

To the visitors on the shore the dam looked much like the carriage sheds in which they tied their horses when they went to church on Sunday. It was a hollow framework of timbers with a roof slanting upstream. The base was riveted to the river bottom. The lip of the dam was protected by boiler plate. Scoffers and believers argued its merits until the signal came to close the gates. The hour of theory had passed; the pragmatic test had come. Above the dam the water began to rise. Below it the current slipped away exposing for the first time the rocky bed of the river. Men and boys hastened, while there was yet time, to emulate the children of Israel who, when the waters parted, crossed the Red Sea dryshod. Shouts of triumph filled the air. Hour after hour the water rose. It seemed as though the great Connecticut had been conquered. Then a leak appeared and a hasty examination by the engineers showed that the stone bulkhead at the western end of the dam was weakening. It threatened to tip over. Frantically railroad iron was piled onto the masonry to hold it in place. In the midst of these efforts a crack was heard in midstream. John Chase and Philander Anderson with horror saw the work of their hands slowly topple over and then swiftly disintegrate into a confused mass of timbers. A great wave roared over the dry rocks and a man-made flood swept down the Connecticut. Terrified Irish mothers from the Patch mistook the tossing timbers in the foaming river for their sons and husbands and the sound of their shrieks and their weeping rose above the roar of the river. The panic passed and soon it was known that no loss of life had occurred. Then through the following days an unseasonable flood of muddy water filled with timbers caused curiosity and sometimes consternation in down river communities, while sightseers flocked, as is their wont, to the scene of the disaster.

It is not recorded what the chiefs of the Hadley Falls Company said behind closed doors to John Chase and Philander Anderson. Publicly their treasurer telegraphed to Boston: "Dam gone to hell by way of Willimansett." It is also a matter of record that the Irish laborers in the Patch were soon cheered by the news that work on a new and greater structure would start at once. Shanties that seemed too small to house a family became almost overnight boarding and lodging houses, as new laborers were added. Through the winter of 1848-9 timbers and iron work was assembled and stones prepared for the walls. The Patch was gay with the songs of Erin.

On October 22, 1849 the gates of a new dam, the work of the same engineers, were closed. The river rose until it plunged in a mighty waterfall over the lip. From that day to this the Connecticut has been the servant of men. The new structure was the fruit of that determination which turns defeat into victory. Like its predecessor it was built of timbers, this time one foot square and laid in massive cribs. These were bolted together and the whole structure was firmly bedded and fastened to the bottom, four feet into the solid rock. The cribs rose thirty feet at the downstream side of the dam. The structure was eighty feet in breadth and over a thousand in length. The cribs were covered with a roof of planks eighteen inches thick which sloped upstream from the lip to the river bottom. The ridge was capped with heavy iron plates to protect it against the wear and tear of freshets.

Over this iron shod lip the Connecticut plunged in a small Niagara. The roar filled the air and the ground shook. A little four-foot apron projected from the crest of the dam, a roof for a plank walk suspended by rods. For a short time inspectors and a few of the curious ventured behind the great waterfall. But when logs and ice falling over the dam carried the apron away it was never rebuilt. The water impounded by the structure flowed into canals cunningly devised by Chase and Anderson so that it could be thrice used before being returned to the river. Save for the first inadequate dam the engineering of this pair was flawless. For eighty-eight years their basic plan has remained unchanged.

## THE GROWTH OF HOLYOKE

About their dam and its associated system of canals rose the city of Holyoke. It did not, however, spring suddenly into existence. To its surprise the Hadley Falls Company found the investing public at first indifferent to the factory sites and the water power facilities which it offered. The company built a cotton mill or two—several stories in height for ground space was valuable—but other adventurers were slow to come. The disappointed managers were inclined to blame the California fever for their small success. When the gates of the second dam were closed, the greatest population trek in American history, the California gold rush, was just coming to an end. Why build cotton mills in Holyoke or work in them when one could dig gold in the Sierras? In 1857 business tumbled into a panic and depression. The Hadley Falls Company was reorganized. Four years later came the Civil War. During these long years of hard and uncertain times the entrepreneurs who were the builders and the economic masters of Holyoke found the solution for their perplexing problem. They abandoned the dream of creating another great textile center, like Lowell and Manchester, and turned to paper. Before the century came to an end Holyoke was the most important paper making city in the United States.

## THE APRON

Over the dam, month after month and year after year, poured the Connecticut. It was an inspiring sight, admired by countless visitors. When, however, the anxieties caused by the War between the States were dissipated at Appomattox, a new fear appeared among the thoughtful citizens of Holyoke. Was the dam upon which their very lives depended being undermined? Was the pounding of the water eroding the rocky river bottom? Tests proved that the river was secretly preparing to destroy the obstruction which prevented its free flow to the sea. Great holes, some of them forty feet deep, had appeared at the very base of the dam. As a result the gates were opened and a wooden apron was constructed. The structure was almost as vast as the original dam. When the gates closed, and the river again spilled over the dam, the roar was heard no more—only the sound of water slipping quietly over the apron to the rocky bottom beyond. Holyoke had achieved security.

## THE END OF AN ERA

With the completion of the Holyoke dam an era came to an end. From the time of Washington until 1850 American civilization was dominated by farmers and traders. It was an agricultural-commercial civilization. Industrialism was rising but still played a minor role beside commerce and agriculture. Industry, for the most part, was dependent upon creeks and rivers for the power to turn its machines. The Holyoke enterprise was the last and the greatest of the attempts of American industry to found factories directly on dams. Within six years after its completion Bessemer had perfected that process which made low-priced steel a possibility. Within five years after the closing of the gates at Holyoke it was possible to travel entirely by rail from the Atlantic seaboard to Chicago. Cheap steel made it possible to build steam engines of high efficiency and lowered cost and the railroad made available a limitless supply of power in the form of bituminous coal from the Appalachian mountains and the upper Mississippi valley. The Holyoke dam marks the end in America of the age of wood, water power, and iron. The age of steam and steel was at hand. When men again turned to waterpower it was to meet the demands of still a third age, that of electricity.

America, young though the nation be when compared with Europe, has its picturesque ruins. They dot New England in the form of broken dams, vine covered foundation walls of the manufacturing enterprises of a century ago, and pieces of iron machinery rusting in the gravel of creek and river beds. Technology marches on and the wonders of yesterday become the curiosities of today. But in every great age some men succeed in rising above the transient and in creating works which outlast the times which produce them. The founders of Holyoke were such men. They built with such honesty and such intelligence that the city has never been forced to abandon its original foundations. It remains a living monument to those pioneer engineers and industrialists of the mid-nineteenth century who had neither coal nor steel. When, after the Civil War, these two commodities became available, creative imaginations of the type which visioned Holyoke transformed America within a third of a century into the leading industrial nation of the world.

THE END

*The "1936 Pilgrimage" to New England, including Springfield, Holyoke, Northampton, Deerfield, Greenfield, Worcester and Boston, was under the direction of the American Newcomen's permanent New England Committee, whose roster is given on the following pages.*

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